



Clearing the Air: Why Air Quality Reforms Finally Took Hold in Delhi

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Executive Summary

India's experience in regulating vehicular air pollution in Delhi has been cited as an innovative model throughout Southeast Asia and even farther. The story that is commonly told has three core elements: M.C. Mehta, a public interest lawyer, filed a "public interest litigation" before the Indian Supreme Court. An activist Supreme Court took charge when regulatory agencies would not. The controversial remedy imposed by the Court was to require commercial vehicles in Delhi to reduce their pollution by using compressed natural gas (CNG) in place of more highly polluting fuels.

Hailed on the one side by environmental advocates and criticized on the other by numerous technical experts, what is shared between both groups and many outside observers is the general perception that the policies enacted were chosen by the Supreme Court, an institution that is normally assigned the role of adjudicator and not environmental policymaker. Supporters argue that it was necessary for the court to be decisive where no one else would. Opponents assert not only that the Supreme Court's actions represent an inappropriate intrusion on the executive branch but that the court also mandated inefficient policies.

Did the policy to mandate conversion to CNG originate with the Supreme Court? And if so, did this mark inappropriate judicial activism, taking over a responsibility that should have rested elsewhere in government? What was the role, if any, of the government in bringing this policy to fruition? What was the role of other stakeholders? Was the policy efficient?

The purpose of our study was to examine the record and try to answer these questions. We have undertaken this deeper understanding of what happened in Delhi for several important reasons.

First, the pioneering environmental public interest litigation of MC Mehta has inspired similar lawsuits not only in other Indian cities, but also in neighboring countries. Any number of environmental advocates, frustrated by official inaction in the face of severe pollution, have sought recourse in the courts. But it is important to understand what specifically has been the role of the Supreme Court in the effort to put the reins on environmental pollution. In assessing this experiment, it is critical to comprehend not only the policy outcome, but also the process and the role played by other institutions such as environmental regulatory bodies, stakeholders, experts, and the general public in enabling the policy changes.

Observers also need to consider whether the Court usurped the role of regulatory bodies, as some critics have charged. Even if one assumes that the CNG conversion was a success and reduced Delhi's pollution, what is the impact, long-term, on governance structures in India and on future efforts to regulate pollution, when the Court seem to be directing the most basic decisions of environmental policy?

The Lessons Learned

It is true that the Supreme Court played a central role in the policy process, especially when it came to the conversion of all commercial vehicles to CNG. But the court did not act alone, nor did it act without policy guidance and support from the government. The Court's role, more often than not, was to prod various arms of a reluctant government in two significant ways: to implement existing policies and to develop new policies to control air pollution. In view of the Indian realities, particularly an understaffed and under-equipped Ministry of Environment and Forests (MoEF) and the constant interference of politicians, the Court's orders often gave the government protective cover, or a strong spur to get past partisan politics and bureaucratic logjams, by forcing it to put into operation its own announced policies.

When we say this, we want clearly to distinguish policymaking from policy implementation. While it vacillated in the implementation category, the government played a clear role in policymaking to curb air pollution in Delhi. The government acted through various central and state-level ministries and, at times, somewhat less directly through statutorily based committees. One of the latter, the Environment Pollution (Prevention and Control) Authority (EPCA), sifted options and weighed the impacts and implications of various policies, and provided its recommendations simultaneously to the MoEF and the Court, a strategy that was apparently designed to preserve EPCA's independent voice. And before that, another committee advised the Court, although less effectively. Guidance from such committees was crucial in making the Court's role more effective.

However, none of this deliberation or decision-making happened overnight. The process leading up to the Court orders that firmly established CNG as the fuel for public vehicles began with MC Mehta's writ petition in 1985, but evolved over a number of years before the Court issued its definitive orders in 1998. We speculate that the length of this process could be perceived as part of an overall progression in the development of a level of consensus that essentially backed up the Court's decisions and allowed them to be accepted by the large number of private and public vehicle operators, as well as other stakeholders. The government recognized it must follow Court orders and it did so when it was satisfied that the Court had spoken clearly on the issues. The Court and the bodies advising it had to confront and resolve several significant issues as the process developed. The policies that evolved as a consequence not only took into account scientific and statistical data, but also relevant institutional considerations. The Court essentially took the regulatory bodies up over political and bureaucratic hurdles that they could not themselves overcome.

Apart from the Court, the EPCA, a previous committee, the mostly reluctant government, and organized NGOs were the key players in the policy process. Some groups, like the automobile industry, were able to influence the policy process more than others, most notably the private bus operators. The debate was at times intense and contentious.

As for the efficiency of the Supreme Court policy for converting commercial vehicles to CNG, in an ideal world, it would be more cost effective to set vehicular and fuel standards and leave the decision of which technology to use to the consumers. But it is impossible to ignore the reality that diesel adulteration is rampant and politically impossible to check. Our study of these and other facts leads us to conclude that CNG was the only feasible option given the institutional realities in India.

What was the role of the Government in developing a policy to control Delhi's pollution?

On a formal level, during the mid to late 1980s, the government enacted a great deal of environmental legislation and announced many initiatives. New legislation added the Environmental (Protection) Act of 1986, the 1987 Air Act amended, the 1988 Motor Vehicles Act, and the 1989 Central Motor Vehicle Rules to the 1981 Air Act, which itself gave the CPCB authority to take a number of actions with respect to air pollution including to "lay down standards for the quality of air." The 1988 Motor Vehicles Act and the 1989 Central Motor Vehicles Rules gave the government authority to set standards for vehicular emissions for manufacturers and users.

In the mid-1980s, government initiatives at both the Central and Delhi level included a number of campaigns to educate Delhi residents about air pollution and to reduce vehicular pollution through both voluntary and nonvoluntary means, as well as a series of enforcement plans that would impose penalties. Vehicular exhaust emission standards for smoke, visible vapor, grit, sparks, ashes, and cinders were set for the first time in 1990. In April 1991, a distinguished committee under Professor H.B. Mathur was tasked to recommend vehicular mass emission norms that would be targeted for 1995 and 2000.

A representative example of the numerous policies enacted by the state to curb pollution, and the process by which such policies were slowed down, watered down, or undercut include the following: The MoEF established the first set of vehicular mass emission standards for India, which were notified in 1993. The standards were a diluted version of recommendations made by the 1991 Mathur Committee and more lenient than the initial proposal for consideration put up by the CPCB. Under pressure from the automobile industry, the MoEF extended the deadline for these standards. Press reports indicate that further lobbying by the automobile industry resulted in even further relaxation of the emission standards for 2000.

In August 1990, the Central Government approved the second master plan for Delhi, which outlined the hazardous, noxious, heavy, and large industries that had to be shifted out of Delhi within three years. This deadline came and went but nothing was done to shift the industries. In October 1997, after much prodding from the Supreme Court, the Delhi government announced that it would phase out 15-year old vehicles by March 1998. A few months later, with Parliamentary elections and protests looming, the Delhi government withdrew this policy initiative saying that it would make an objective decision later.

In all, there was no lack of government policies, but a distinct pattern emerged in which standards and announced policies either were not implemented or were weakened in response to protest. The above-the-line message was that the government recognized the need for pollution control. The sub-text seemed to be that no policy could be implemented without Court intervention.

While it is true the government had to be pushed by the Supreme Court to act, it is also important to note that on two key occasions the government chose not to overrule the Supreme Court with a parliamentary ordinance. In both instances, the Central government was under substantial pressure to do this, which is allowed under the law. But it chose not to confront the Supreme Court and let the policy stand, clear evidence of respect for rule of law in India.

Did the Supreme Court originate the policy of conversion to CNG and if it did, was it intruding on the role of the environmental regulatory body?

The idea of using CNG for transportation did not originate with the Supreme Court. As part of a larger discussion about how to manage urban and vehicular pollution, CNG was debated in Indian policy circles as early as in 1988, when it was recommended in a World Bank study and the state enterprise Oil and Natural Gas Commission introduced CNG on an experimental basis in its own vehicles. In 1992, the Gas Authority of India Limited (GAIL) and the Indo-Burma Petroleum Company Limited made attempts to popularize the use of CNG in Bombay, Baroda, and New Delhi, and GAIL floated long-term plans to convert bus fleets to CNG in cities along the Hazira-Vijaypur-Jagishpur pipelines (which did not include Delhi). The Delhi transport authorities were said to have converted five buses to CNG in 1992 and, by 1994, claimed the success of a pilot project

for 40 vehicles. In 1994, the Delhi government said it would open more CNG outlets and possibly subsidize the cost of CNG conversion kits.

All of these were experiments or piecemeal announcements, and no real, comprehensive decisions were made concerning CNG. Apparently frustrated by the limited effectiveness of these and the other efforts on the part of the Delhi administration, the Central Government and others, the Court chose to intervene. However, it did not do so directly; instead, the Court expressed the need for independent advice. Recognizing that it was faced with highly technical issues, the Court was concerned that hearings before it seemed to be adversarial rather than useful, and wanted instead “useful deliberations so that something concrete could finally emerge.” It asked the MoEF to set up a committee authorized by Section 3(3) of the Environment Protection Act to look into the problem of vehicular pollution in Delhi and to devise a solution. After some discussion, the first of two such committees, the Saikia Committee, was constituted in March 1991.

This first committee’s most significant recommendations included the phase-out of leaded petrol in Delhi. But it is important to note that the Saikia Committee’s recommendations on this issue were essentially rooted in a plan that had been previously announced and then abandoned by the MoEF. The Saikia Committee also recommended that CNG become an alternative vehicular fuel on the basis it was less polluting, cheaper, and more widely available in the country than petrol or diesel. In response to what it was hearing, in early 1995, the Supreme Court ordered that all government cars switch to CNG or install catalytic converters and use unleaded fuel. A few months later, Justice A.M. Ahmadi announced that all official cars belonging to the Supreme Court would soon run on CNG. But issues such as the availability of CNG conversion kits and lack of CNG outlets presented significant obstacles to even this small sign of progress.

In sum, between 1985 and 1996, there was much official discussion about fuel policy and CNG, along with numerous policies and false starts. By and large, the policies that emerged were piecemeal and tended to be poorly implemented. None represented an effort to evolve a comprehensive policy to curtail pollution in Delhi. And, Delhi’s pollution levels continued to rise. Clearly, none of the government policies was working.

It was in this context that the Supreme Court, on November 18, 1996, issued an order on its own initiative (“suo moto”) to the Delhi government. The Court directed the Delhi authorities to submit a plan to control the city’s air pollution. The government’s response in an affidavit filed with the Court contained its first comprehensive plan, which included, among other items, recommendations to reduce the sulfur content in diesel and to encourage the use of CNG by building the necessary infrastructure and providing financial incentives. Again, however, few of these policies—such as a proposed phase out of 15-year old vehicles—were implemented. The Supreme Court’s response in this and other instances, time and again, was to force the Delhi government to implement its own policy directives.

Another such example is the MoEF December 3, 1997, plan to curb pollution in Delhi, which took the form of the “White Paper on Pollution in Delhi with an Action Plan,” the

result of a series of meetings with “concerned government agencies, NGOs, experts and citizens.” Its policy suggestions to curb vehicular pollution are similar to those contained in the government’s 1996 affidavit.

Following the release of the White Paper, the Supreme Court quickly ordered the creation of the second committee, the EPCA. This quasi-governmental body’s members included government officials, a representative of the then still-government owned automobile manufacturer Maruti, and a public member from the Centre for Science and the Environment (CSE). It was set up under the authority of section 3(3) of the Environment Protection Act. The EPCA was directed to monitor the progress of the White Paper implementation, develop new policies to curb vehicular air pollution, and serve as a fact-finding body for the Court. One view is that the EPCA was established in response to government complaints that the Supreme Court was over-stepping its bounds and making policy decisions in place of the government.

EPCA’s subsequent plan to curb pollution was adopted as a mandate by the Supreme Court in a July 28, 1998, order. Though EPCA’s plan did share measures with the plans of the Delhi government and the Ministry, overall, it was bolder and more specific. Other plans talked about encouraging the use of clean fuels in public transportation. EPCA’s plan would switch all taxis and autos to a clean fuel, ban all eight-year old buses except those on clean fuel, and move the entire bus fleet to CNG. From EPCA’s first report, it appears that EPCA felt that more drastic measures, such as use of CNG, were needed to curb pollution and that the conversion of buses, taxis, and autos could take place without any additional cost to the taxi and auto owners. Any additional costs to vehicle owners could be met through subsidies provided by the state.

The minutiae of several years of back and forth negotiations on the details of all these issues are set out in the body of this report. The bottom line is that the various responsible government agencies waffled back and forth, often promising implementation and then missing deadlines. The Court maintained a close watch, in part by tasking the EPCA to sort facts. The EPCA met regularly and reported back to the Court.

For the most part, the Court stayed faithful to the recommendations of the EPCA. The most prominent example in which the justices did not act on an EPCA recommendation was registration of diesel-fueled private vehicles. Both the EPCA and the Amicus Curiae, a distinguished lawyer appointed to the case to assist the Court in reviewing papers filed with it, suggested that registration of private diesel cars be suspended and that the Court freeze diesel car sales. Lawyers for the auto industry argued strenuously against this. Instead, the Court ordered that all private cars must conform to engine standards by new, tighter deadlines. Both sides declared victory. What was significant from our point of view is how closely most Court orders tracked already created government policy and the technical support provided to the Court by the EPCA.

Were the policies that the Court eventually enacted inefficient and were efficient policies a genuine option?

One of the strongest attacks on the CNG decision has been that forcing all commercial vehicles to use CNG is not efficient. Critics such as Dr. Ranjan Bose of TERI and Professor Dinesh Mohan of IIT Delhi argued for a multiple fuel policy. They would prefer to let the consumer decide the most cost effective way to come into compliance and they felt strongly, including in our interviews, that the Court had made a substantial mistake on this issue.

What we learned in our research is that the Indian government and environmental regulators were fully aware of the many approaches that can be taken to control vehicular pollution and had, in fact, tried a number of them. However, few of these programs have been effective, and many have been riddled with significant enforcement problems. In the end, it was this experience that pushed the EPCA and the Court to the CNG solution. The poor compliance and enforcement history served as a vivid warning about the dangers of adopting a multiple fuel policy.

Efforts to institute programs to crack down on heavily polluting vehicles by regular inspections have been undertaken sporadically for at least 15 years. Tough fines have also been on the books since 1988, and at various times even stiffer penalties, including impoundment and permanent confiscations of vehicles (following multiple offenses) were threatened.

The Pollution Under Control (PUC) sticker and certificate is one such example. The goal of this inspection and maintenance program, set up jointly by the CPCB and the Ministry of Road Transport and Highways, is to identify the most heavily polluting vehicles and require that they be repaired or retired. In practice, the PUC tests can be manipulated. Even worse, in the near absence of penalties, centers can issue fraudulent permits with impunity, and cheating is so pervasive that the small percentage of vehicles that have a current PUC certificate are believed to have obtained them that way. Former Delhi Administration Transport Minister Rajendra Gupta said that the program has failed miserably.

In contrast, there are two fuel-related regulatory success stories, both Court supervised, that provide some additional evidence on the workability of government-ordered policies. In both cases, the technical challenges of making the change were easier to overcome than the shift of commercial vehicles to CNG technology. One was the effort to remove lead from petrol, which was completed by early 2000. Some of the problems encountered then foreshadowed difficulties in introducing CNG into Delhi. Substantial coordination problems developed when the growing demand for unleaded gas overwhelmed the existing supply infrastructure. At some stages, there were literally not enough filling stations pumping unleaded petrol to meet consumer needs. In contrast to the decision to shift commercial vehicles to CNG, however, the introduction of unleaded gas did not require special delivery systems and filling stations, and consequently required much less capital investment.

The second fuel policy success was mandating premixed fuel for two-stroke engines, which seems to have reduced the problem of excess, and therefore highly polluting,

lubricant use in such engines. The economics of introducing pre-mixed fuel were largely favorable and compliance with the program did not require vehicle owners to make a substantial investment, as the shift to CNG did.

The sticking point for the Supreme Court in the debate on clean fuels was the issue of adulteration. The proponents of the more efficient multiple fuel policy were never really able to provide a cogent response to the adulteration question, and this is what ultimately turned the decision process toward the admittedly less efficient CNG policy. As early as 1994, a survey concluded that highly subsidized and therefore cheaper kerosene was being used as a substitute for diesel. Simply put, adulteration is very hard to fight. It can take place at many stages of the supply chain: refinery gates, during transport to retail outlets, at retail outlets, and by operators of diesel vehicles. Because kerosene causes relatively little damage to diesel vehicles, owners have no incentive not to use it, even though it is harmful to the environment.

In the end, the experience with PUC and other attempts to regulate polluting vehicles demonstrated the shortcomings of policies that would, under more ideal circumstances, have proved more efficient. It might have been more efficient to identify vehicles that are actually the worst polluters than simply to assume that the oldest ones are and ban them—but it is far easier to fake an emissions test than a vehicle's age. If increasingly clean fuels were put on the market, they might afford a more efficient way of reducing particulate emissions—but there is simply no way to assure they would not be adulterated with kerosene, so long as the subsidies to kerosene remain in place. Suggestions accompanying the multiple fuel policy, such as stronger enforcement and decreased subsidies for kerosene, while logical, seemed to fly in the face of reality and experience.

What was the role of stakeholders and the general public in this policy evolution?

Stakeholders included the NGO community, persons and groups in the affected industries affected in one way or another by the Court's Orders, and the general public. In addition, politics and politicians played a significant role at various points.

Organized NGOs were prominent players in the issues before the Court. M.C. Mehta, the public interest lawyer who brought the groundbreaking case that began this process, continued to play an active role for at least 10 years. In the mid-1990s, a second NGO, CSE, took a prominent role, first by publishing a report that connected vehicular technology and maintenance, poor fuel quality, and traffic planning to the health impacts from Delhi's high pollution levels. Thereafter, CSE monitored the Court proceedings and brought forward data and information at critical points, for example during the debate about possible adulteration of low and ultra low sulfur diesel. The then head of CSE wore essentially two hats in this process: he was a strong advocate for Supreme Court action, and eventually for CNG, and he was also the "public" member of the EPCA and participated in the deliberative process.

Some stakeholders in private industry retained legal counsel throughout the proceedings. Other stakeholders, like the private bus operators, joined the fray late, arguing that they

didn't know earlier about the litigation or its potential impact. When they did engage, they told us that they were frustrated by their lack of access to the EPCA and the Amicus Curiae, neither of which (in the bus operators' opinion) were interested in their views. They also strongly felt that the Court did not appreciate their plight. Eventually, the bus operators hired counsel in order to appear formally before the Court, but they continued to believe that they had been made scapegoats for a wider problem, arguing that the contribution of private buses to pollution was not significant compared to the sheer number of other vehicles on the roads of Delhi.

The public at large did not have much role either in the Court proceedings or the decision process. To some extent, both M.C. Mehta and CSE "represented" the interests of some parts of the public, but they were self-appointed. No organized group represented other public opinions such as the interests of the bus-riding public. At various points, the Supreme Court did order outreach to the public in the form of, for example, media advertisements. Moreover, the Court appointed the Amicus Curiae whose job it was to speak for unrepresented views before the Court and to review the many affidavits filed with the Court. But, there was never a systematic effort to keep the public at large abreast of judicial developments or allow comment on the various options considered, except as reported in the press.

Finally, many of these issues got caught up in electoral politics, as Congress and the BJP repositioned themselves at various times. For example, opposition political parties in Delhi became spokesmen for transporter unions who opposed the introduction of CNG, but the party in power also saw and tried to exploit opportunities, particularly when the bus operators went on strike and angry commuters burned buses and stalled traffic. Today, even political parties that resisted the CNG decision are taking credit for the perceived improvements in Delhi air.

What are the consequences when the Court acts in place of regulatory bodies?

One of the most significant questions posed by this research is what are the long-term consequences when a Court assumes the kinds of responsibilities that the Court here undertook, to sort out environmental protection options and force the government to implement its existing policies. On the one hand, it is not unusual for Courts in the western democracies to hold government bodies accountable for their actions. On the other, the Court in this case did not merely take the government to task for its failures. The regulatory bodies essentially became advisors to the Court, which drove the policy implementation policy forward. If society increasingly looks to the Court rather than to the regulatory bodies for these functions, it is necessary to ask if this is a good outcome. However, it is also important to note two occasions when the government demonstrated great backbone by choosing not to overrule the Supreme Court in response to political pressure.

What impact does this have, long-term, on governance structures in India and on future efforts to regulate pollution?

It is our conclusion that the Court acted with relative restraint on the issue of shifting public vehicles to CNG. It did not act precipitously, and it largely relied on bodies of experts and much of its activities involved pushing the government to implement already-announced policies that had lain dormant or been deferred. Options were vetted by the EPCA and before that by the Saikia Committee.

Nevertheless, any situation in which the Court consistently becomes the promoter of environmental policy can have one of two effects. The success of the CNG program could invigorate the regulatory bodies and give them confidence that the policies they developed were good ones and worth implementing. In that case, the regulatory confidence of environmental and transport ministries might have been enhanced by the success of the CNG program, and they might be encouraged to undertake other programs to reduce pollution. On the other hand, the role of the Court could be seen as a crutch in which regulatory muscles atrophy because another entity is doing its work.

However, we have a separate concern about how the Court's role has evolved. Although there is evidence that the CNG decision was very closely tracked, for the most part, with existing government policy, we are not sure that this same discipline has continued into the most current activities of the Court. As the case has evolved, the Court has increasingly focused on very small details, many of which seem increasingly far afield of the original set of issues. More recently, the Court seems ready to adjudicate issues such as CNG pricing and intercity transport. While these clearly have some relationship to the core issues before the Court, they also bring the Court into deciding issues well beyond the matters put before it by M.C. Mehta's original writ petition. Concerns about this were raised to us by both a lawyer close to the case and an NGO advocate. It's not hard to see how the Court could become a victim of its own success and push too hard on issues that are really beyond its technical competence and/or the competence of the EPCA.